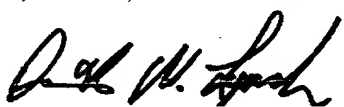




THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: HARRISON et al. Examiner: Shah, N.
Serial No.: 09/550,420 Group Art Unit: 2127
Filed: April 17, 2000 Docket No. **BLD920000004US1**
(IBMN.008US01-0503)
Title: METHOD AND APPARATUS FOR PRIORITIZING PRINT JOBS FROM
MULTIPLE PRINTER INPUT CHANNELS

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence and the papers, as described hereinabove, are being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Mail Stop Appeal, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on October 30, 2006.

By: 
David W. Lynch

APPEAL BRIEF

MAIL STOP APPEAL
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is an Appeal Brief submitted pursuant to 37 C.F.R. § 41.37 for the above-referenced patent application. Please charge Deposit Account No. 50-3669 (BLD920000004US1) in the amount of \$500.00 for this brief in support of appeal as indicated in 37 C.F.R. § 41.20(b)(2).

I. Real Party In Interest

The real party in interest is International Business Machines Corporation, having a place of business at New Orchard Road, Armonk, New York 10504. This application is assigned to International Business Machines Corporation.

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II. Related Appeals And Interferences

Appellant is unaware of any related appeals, interferences or judicial proceedings.

III. Status Of Claims

Claims 1-40 are rejected. Claims 1-40 are presented for appeal and may be found in the attached Appendix of Appealed Claims in their present form.

IV. Status Of Amendments

No amendments to the claims were made subsequent to the final rejection of Appellants' application.

V. Summary Of Claimed Subject Matter

The claimed subject matter provides a method and apparatus for prioritizing print jobs from multiple printer input channels.

Independent claim 1 presents a method for dictating the order that print jobs received over multiple data channels of a printer are printed. The method includes assigning priority values to data channels of a printer that receive print jobs (Fig. 2, 200; page 12, lines 12-17), associating the priority value assigned to the data channel of the printer with the print jobs received by the printer at its respective data channel (Fig. 2, 202; page 13, lines 2-6) and printing the print jobs by the printer in an order corresponding to their associated priority values (Fig. 2, 204; page 13, lines 6-13).

Independent claim 15 presents a computer-readable medium (Fig. 6, 616, 618; page 19, lines 7-10) having computer-executable instructions for performing steps. The steps include assigning priority values to data channels of a printing device that receive print jobs (Fig. 2, 200; page 12, lines 12-17), associating the priority value assigned to the data channel of the printing device with the print jobs received at its respective data channel (Fig. 2, 202; page 13, lines 2-6) and printing the print jobs by the printing device in an order corresponding to their associated priority values (Fig. 2, 204; page 13, lines 6-13).

Independent claim 16 presents a printing device (Fig. 1, 100; page 7, lines 15-16) coupled to receive print jobs transmitted by one or more computing devices. The printing device includes a plurality of data channels (Fig. 11, 102, 104, 106; page 11, lines 8-10) at a printing device, the plurality of data channels being configured for receiving the print jobs (Fig. 1, 112, 114, 116; page 8, lines 2-4), wherein each of the data channels are assigned respective priority values (Fig. 1, 132, 134, 136; page 11, lines 10-11), and wherein the print

jobs received at the data channels assumes the priority value of its respective one of the data channels, a compare module (Fig. 5, 516; page 16, lines 21-22), coupled to receive the priority values corresponding the received print jobs and to identify the print job exhibiting the highest priority and a print engine (Fig. 5, 520; page 17, lines 2-3), at a printing device, the print engine being configured for printing the print jobs in an order from the highest priority to the lowest priority as identified by the compare module.

Independent claim 26 presents a printing system (Fig. 1, 100; page 7, lines 15-16) for printing data transmitted via print jobs. The system includes one or more computing devices (Fig. 6, 600; page 19, lines 1-3) arranged in a network (Fig. 6, 632; page 19, line 22 to page 20, line 6), wherein the one or more computing devices transmit the print jobs over the network, a printing device coupled to the network to receive the print jobs transmitted by the one or more computing device, the printing device including (a) a plurality of data channels (Fig. 11, 102, 104, 106; page 11, lines 8-10) for receiving the print jobs (Fig. 1, 112, 114, 116; page 8, lines 2-4), wherein the data channels of the printing device are assigned a priority value (Fig. 1, 132, 134, 136; page 11, lines 10-11), and wherein the print jobs received at the data channels of the printing device assume the priority value of its respective one of the data channels of the printing device, (b) a compare module (Fig. 5, 516; page 16, lines 21-22) to receive the priority values corresponding to the print jobs received over the data channels of the printing device and to identify the print job exhibiting the highest priority and (c) a print engine (Fig. 5, 520; page 17, lines 2-3) to print the print jobs in an order from the highest priority to the lowest priority as identified by the compare module.

Independent claim 29 presents a method of dictating the order in which print jobs are printed on a printing device. The method includes providing a plurality of data channels at a

printing device to receive print jobs, wherein the data channels receive predefined groups of print job types (Fig. 2, 200; page 12, lines 12-17), assigning a priority value to the data channels of the printing device that receive print jobs, associating the priority value of the data channels of the printing device with the print jobs received at the respective one of the data channels (Fig. 2, 202; page 13, lines 2-6), determining relative priorities of the print jobs based on their associated priority values (Fig. 4, 400; page 14, lines 17 to page 16, line 4), printing the print jobs at the printing device in a sequence corresponding to the relative priorities associated with the print jobs (Fig. 2, 204; page 13, lines 6-13).

Independent claim 35 presents a computer-readable program storage medium (Fig. 6, 616, 618; page 19, lines 7-10) tangibly embodying a program of instructions executable by a print server system to process print jobs by performing steps. The steps include assigning priority values to a plurality of data channels of a printer that receive print jobs (Fig. 2, 200; page 12, lines 12-17), associating the priority value assigned to each data channel of the printer with print jobs received by the printer at its respective data channel (Fig. 2, 202; page 13, lines 2-6), determining relative priorities of a plurality of print jobs based on their associated priority values (Fig. 4, 400; page 14, lines 17 to page 16, line 4) and printing print jobs by the printer in a sequence corresponding to the relative priorities associated with the print jobs (Fig. 2, 204; page 13, lines 6-13).

Independent claim 36 presents a printing device (Fig. 1, 100; page 7, lines 15-16) coupled to receive print jobs transmitted by one or more computing devices. The printing device includes a plurality of data channels (Fig. 1, 102, 104, 106; page 11, lines 8-10) at the printing device for receiving the print jobs (Fig. 1, 112, 114, 116; page 8, lines 2-4), means (Fig. 3, 302; page 13, lines 23 to page 14, line 16) for assigning a priority value to the data

channels of the printing device, means (Fig. 1, 102, 104, 106; page 11, lines 8-10) for attributing the priority value of the data channels of the printing device to the print jobs received via its respective one of the data channels, means (Fig. 5, 516; page 16, lines 21-22) for comparing the priority values of the print jobs that are pending, and for identifying the print job exhibiting the highest priority and means (Fig. 5, 520; page 17, lines 2-3) for printing the print jobs by the printing device in an order from the highest priority to the lowest priority.

VI. Grounds Of Rejections To Be Reviewed On Appeal

Appellant has attempted to comply with new rule 37 C.F.R. § 41.37(c) by providing the Office Action's grounds of rejection verbatim, followed by an argument section corresponding thereto.

- A. In paragraph 4 on page 2 of the Office Action, claims 1-37 were rejected under 35 U.S.C. § 102(e) as being anticipated by Brown.

VII. Argument

A. REJECTION OF CLAIMS 1-37 UNDER 35 U.S.C. 102(e) AS BEING ANTICIPATED BY BROWN

1. INDEPENDENT CLAIMS 1, 15, 16, 26, 29, 35 AND 36 ARE PATENTABLE OVER BROWN

a. INSTEAD OF ASSIGNING PRIORITIES TO DATA CHANNELS, BROWN ALLOWS RESOURCES ASSIGN TO ONE PORT TO BE REASSIGNED TO ANOTHER PORT

Brown does not assign a priority to data channels. The Examiner asserts that priority values are assigned to data channels, (serial port, SIR, MIR, FIR, parallel port, Ethernet port, Token Ring) at column 20, lines 3-30.

Brown does not assign a priority to data channels. However, Brown merely discloses that resources, i.e., memory, assign to one port may be reassigned to another port. Thus, Brown merely provides a method for allocating memory space for communications port buffers in a computer system.

Brown teaches creating a "pool area" of memory elements. Then, some memory elements are initially allocated from the created pool area to each communications port.

Later, further memory elements may be allocated from the pool area for a buffer that is associated with a communications port that has become active.

Referring to column 6, lines 40-43, Brown discloses that “an active port may attempt to “steal” RAM that has been previously allocated to another active port by comparing the priority level of their respective print jobs. Note, that Brown refers to the priority level of the respective print jobs – not the priority of the data channel itself.

In addition, Brown discloses, with reference to Fig. 12 for example, that memory (i.e., buffer space) may be taken from memory assigned to another port by determining “whether or not any other active port has a “print job of a lower priority” than “the print job of the current active port.” (See, column 21, lines 21-23.

Brown thus clearly fails to suggest assigning priority values to data channels of a printer that receive print jobs, associating the priority value assigned to the data channel of the printer with the print jobs received by the printer at its respective data channel and printing the print jobs by the printer in an order corresponding to their associated priority values.

Therefore, Applicants respectfully submit that independent claims 1, 15, 16, 26, 29, 35 and 36 are patentable over Brown.

2. DEPENDENT CLAIMS 5 AND 21 ARE PATENTABLE OVER BROWN

a. BROWN FAILS TO DISCLOSE, TEACH OR SUGGEST DEDICATING AT LEAST ONE OF THE DATA CHANNELS AS AN INTERNAL PRINT DATA CHANNEL TO RECEIVE INTERNALLY-GENERATED PRINT JOBS

Dependent claims 5 and 21 recite that at least one of the data channels is dedicated as an internal print data channel to receive internally-generated print jobs.

Brown fails to even mention internal print data channels. Brown also fails to mention internally-generated print jobs. Rather, the focus is on receiving externally generated data.

Therefore, Applicants respectfully submit that dependent claims 5 and 21 are patentable over Brown.

3. DEPENDENT CLAIMS 6, 22 AND 31 ARE PATENTABLE OVER BROWN

a. BROWN FAILS TO DISCLOSE, TEACH OR SUGGEST ASSIGNING THE INTERNAL PRINT DATA CHANNEL THE HIGHEST POSSIBLE PRIORITY

Dependent claims 6, 22 and 31 recite assigning the priority value to the data channel that receives print jobs comprises assigning the internal print data channel the highest possible priority.

As described above, Brown fails to mention internal print data channels or internally-generated print jobs. Furthermore, Brown fails to suggest assigning priorities to print data channels.

Therefore, Applicants respectfully submit that dependent claims 6, 22 and 31 are patentable over Brown.

4. DEPENDENT CLAIMS 13 AND 32 ARE PATENTABLE OVER BROWN

a. BROWN FAILS TO DISCLOSE, TEACH OR SUGGEST ASSIGNING THE PRIORITY VALUE UPON INITIALIZATION OF A PRINTING DEVICE DESIGNATED FOR PRINTING THE PRINT JOBS

Dependent claims 13 and 32 recite assigning the priority value upon initialization of a printing device designated for printing the print jobs.

Brown discloses that upon initialization of the printer, each individual port will only be allocated a small portion of that pool area of RAM to give that port a minimal buffer configuration that is sufficient to begin to receive data. However, Brown fails to disclose, teach or suggest assigning priority values to data channels upon initialization of the print device.

Rather, as described above, Brown merely refers to the “priority of print jobs” and the allocation of memory to ports.

Accordingly, Applicants respectfully submit that dependent claims 13 and 32, 22 and 31 are patentable over Brown.

**5. DEPENDENT CLAIMS 14, 23 AND 33 ARE PATENTABLE
OVER BROWN**

**a. BROWN FAILS TO DISCLOSE, TEACH OR SUGGEST
ASSIGNING THE PRIORITY VALUE VIA A USER
INTERFACE BY A USER GRANTED AUTHORITY TO
REASSIGN THE PRIORITY VALUES TO SELECTED
ONES OF THE DATA CHANNELS**

Dependent claims 14, 23 and 33 recite assigning the priority value via a user interface by a user granted authority to reassign the priority values to selected ones of the data channels.

Brown does not mention a user interface for assigning priority values to “print jobs” or to “data channels.” In fact, Brown fails to mention a user interface at all.


Accordingly, Applicants respectfully submit that dependent claims 14, 23 and 33 are patentable over Brown.

B. Conclusion

In view of the above, Appellant submits that the rejections are improper, the claimed invention is patentable, and that the rejections of claims 1347 should be reversed. Appellants respectfully request reversal of the rejections as applied to the appealed claims and allowance of the entire application.

Respectfully submitted,

Chambliss, Bahner and Stophel
1000 Tallan Building
Two Union Square
Chattanooga, TN 37402
423-757-0264

By: 
Name: David W. Lynch
Reg. No.: 36,204

VIII. Claims Appendix

1 1. (Previously Presented) A method for dictating the order that print
2 jobs received over multiple data channels of a printer are printed, comprising:

3 assigning priority values to data channels of a printer that receive print
4 jobs;

5 associating the priority value assigned to the data channel of the printer
6 with the print jobs received by the printer at its respective data channel; and

7 printing the print jobs by the printer in an order corresponding to their
8 associated priority values.

1 2. (Original) The method of Claim 1, wherein assigning a priority value
2 comprises assigning a different priority value to each data channel that receives the print
3 jobs.

1 3. (Original) The method of Claim 1, wherein assigning a priority value
2 comprises assigning two or more of the data channels equal priority values, and wherein
3 printing the print jobs comprises printing the print jobs received via the two or more data
4 channels having equal priority values in an order in which they were received via the data
5 channels.

1 4. (Original) The method of Claim 1, wherein printing the print jobs in
2 an order corresponding to their associated priority values comprises printing the print
3 jobs in an order from highest priority to lowest priority.

1 5. (Original) The method of Claim 1, wherein at least one of the data
2 channels is dedicated as an internal print data channel to receive internally-generated
3 print jobs.

1 6. (Original) The method of Claim 5, wherein assigning the priority
2 value to the data channel that receives print jobs comprises assigning the internal print
3 data channel the highest possible priority.

1 7. (Original) The method of Claim 1, wherein assigning the priority
2 value to the data channel comprises assigning a priority value to each of the data channels
3 that receives a different predefined group of print job types.

1 8. (Original) The method of Claim 1, further comprising:
2 determining whether a plurality of the print jobs currently pending have
3 equivalent associated priority values; and
4 printing the print jobs that have the equivalent associated priority values in
5 an order in which they were received via their respective data channels.

1 9. (Original) The method of Claim 8, further comprising determining the
2 order in which the print jobs having equivalent associated priority values were received
3 by monitoring time of arrival of the print jobs.

1 10. (Original) The method of Claim 8, further comprising determining the
2 order in which the print jobs having equivalent associated priority values were received
3 by queuing the print jobs having equivalent associated priority values in a first-in-first-
4 out arrangement.

1 11. (Original) The method of Claim 1, further comprising queuing the
2 print jobs in an increasing order according to their respective priority values, and
3 forwarding the print jobs to a print engine for printing in the order in which the print jobs
4 are queued.

1 12. (Original) The method of Claim 1, further comprising queuing the
2 print jobs in an order of receipt of the print jobs, and sending the print jobs to a print
3 engine for printing in a sequential order corresponding to the respective priority values
4 associated with the print jobs.

1 13. (Original) The method of Claim 1, wherein assigning the priority
2 value comprises assigning the priority value upon initialization of a printing device
3 designated for printing the print jobs.

1 14. (Original) The method of Claim 1, wherein assigning the priority
2 value comprises assigning the priority value via a user interface by a user granted
3 authority to reassign the priority values to selected ones of the data channels.

1 15. (Previously Presented) A computer-readable medium having
2 computer-executable instructions for performing steps comprising:
3 assigning priority values to data channels of a printing device that receive
4 print jobs;
5 associating the priority value assigned to the data channel of the printing
6 device with the print jobs received at its respective data channel; and
7 printing the print jobs by the printing device in an order corresponding to
8 their associated priority values.

1 16. (Previously Presented) A printing device coupled to receive print
2 jobs transmitted by one or more computing devices, the printing device comprising:
3 a plurality of data channels at a printing device, the plurality of data
4 channels being configured for receiving print jobs, wherein each of the data channels are
5 assigned respective priority values, and wherein the print jobs received at the data
6 channels assumes the priority value of its respective one of the data channels;
7 a compare module coupled to receive the priority values corresponding the
8 received print jobs and to identify the print job exhibiting the highest priority; and
9 a print engine at a printing device, the print engine being configured for
10 printing the print jobs in an order from the highest priority to the lowest priority as
11 identified by the compare module.

1 17. (Original) The printing device as in Claim 16, further comprising one
2 or more print queues coupled to receive and output the print jobs in an order received,
3 wherein the print jobs are received in the order of the highest priority to the lowest
4 priority.

1 18. (Original) The printing device as in Claim 16, further comprising one
2 or more print queues coupled to receive the print jobs in an order received, and to output
3 the print jobs in an order corresponding to their respective priority values.

1 19. (Original) The printing device as in Claim 16, further comprising a
2 job monitor module coupled to the plurality of data channels to receive and store the
3 priority values associated with the print jobs that are currently pending.

1 20. (Original) The printing device as in Claim 19, wherein the compare
2 module is coupled to the job monitor module to receive the stored priority values, and to
3 identify the print job exhibiting the highest priority in response thereto.

1 21. (Original) The printing device as in Claim 16, wherein the plurality of
2 data channels comprise an internal print data channel in which internally-generated print
3 jobs are received.

1 22. (Original) The printing device as in Claim 21, wherein the internal
2 print data channel is preassigned to the highest priority in a range of the priority values.

1 23. (Original) The printing device as in Claim 22, further comprising a
2 user interface coupled to the internal print data channel to allow a user to select print
3 features to initiate the internally-generated print jobs.

1 24. (Original) The printing device as in Claim 23, further comprising an
2 internal print module to generate the internally-generated print jobs corresponding to the
3 selected print features.

1 25. (Original) The printing device as in Claim 16, wherein the priority of
2 the print job is inversely proportional to the priority value associated with the print job.

1 26. (Previously Presented) A printing system for printing data
2 transmitted via print jobs, the system comprising:
3 one or more computing devices arranged in a network, wherein the one or
4 more computing devices transmit the print jobs over the network;
5 a printing device coupled to the network to receive the print jobs
6 transmitted by the one or more computing device, the printing device comprising:
7 (a) a plurality of data channels for receiving the print jobs, wherein the
8 data channels of the printing device are assigned a priority value, and wherein the print
9 jobs received at the data channels of the printing device assume the priority value of its
10 respective one of the data channels of the printing device;
11 (b) a compare module to receive the priority values corresponding to
12 the print jobs received over the data channels of the printing device and to identify the
13 print job exhibiting the highest priority; and
14 (c) a print engine to print the print jobs in an order from the highest
15 priority to the lowest priority as identified by the compare module.

1 27. (Original) The printing system as in Claim 26, wherein each of the
2 data channels is assigned a different priority value.

1 28. (Original) The printing system as in Claim 26, wherein each of the
2 data channels corresponds to a predefined group of print job types.

1 29. (Previously Presented) A method of dictating the order in which
2 print jobs are printed on a printing device, comprising:
3 providing a plurality of data channels at a printing device to receive print
4 jobs, wherein the data channels receive predefined groups of print job types;
5 assigning a priority value to the data channels of the printing device that
6 receive print jobs;
7 associating the priority value of the data channels of the printing device
8 with the print jobs received at the respective one of the data channels;
9 determining relative priorities of the print jobs based on their associated
10 priority values;
11 printing the print jobs at the printing device in a sequence corresponding
12 to the relative priorities associated with the print jobs.

1 30. (Original) The method of Claim 29, wherein printing the print jobs in
2 a sequence comprises printing the print jobs in a sequence of highest priority to lowest
3 priority.

1 31. (Original) The method of Claim 29, further comprising:
2 designating one of the data channels as an internal print data channel 3 to
3 receive internally-generated print jobs; and
4 pre-assigning a priority value to the internal print data channel that
5 represents the highest possible priority value of a priority value range of priority values.

1 32. (Original) The method of Claim 29, wherein assigning the priority
2 values to the data channels comprises assigning the priority values upon initialization of
3 the printing device in accordance with a predetermined priority assignment.

1 33. (Original) The method of Claim 29, wherein assigning the priority
2 values to the data channels comprises assigning the priority values via a user interface to
3 apply user-selected priorities to particular ones of the data channels.

1 34. (Original) The method of Claim 29, wherein determining relative
2 priorities of the print jobs comprises comparing the priority values of the print jobs that
3 are currently pending to each other.

1 35. (Previously Presented) A computer-readable program storage
2 medium tangibly embodying a program of instructions executable by a print server
3 system to process print jobs by performing steps comprising:
4 assigning priority values to a plurality of data channels of a printer that
5 receive print jobs;
6 associating the priority value assigned to each data channel of the printer
7 with print jobs received by the printer at its respective data channel;
8 determining relative priorities of a plurality of print jobs based on their
9 associated priority values; and
10 printing print jobs by the printer in a sequence corresponding to the
11 relative priorities associated with the print jobs.

1 36. (Previously Presented) A printing device coupled to receive print
2 jobs transmitted by one or more computing devices, the printing device comprising:
3 a plurality of data channels at the printing device for receiving the print
4 jobs;
5 means for assigning a priority value to the data channels of the printing
6 device;
7 means for attributing the priority value of the data channels of the printing
8 device to the print jobs received via its respective one of the data channels;
9 means for comparing the priority values of the print jobs that are pending,
10 and for identifying the print job exhibiting the highest priority; and
11 means for printing the print jobs by the printing device in an order from
12 the highest priority to the lowest priority.

1 37. (Original) The printing device as in Claim 36, further comprising means
2 for queuing the print jobs in the order from the highest priority to the lowest priority.

IX. Evidence Appendix

Appellant is unaware of any evidence submitted in this application pursuant to 37 C.F.R. §§ 1.130, 1.131, and 1.132.

X. Related Proceedings Appendix

As stated in Section II above, Appellant is unaware of any related appeals, interferences or judicial proceedings.